



# INC-4 BOOKLET



#PlasticsTreaty





GAIA is a network of grassroots groups as well as national and regional alliances representing more than 1000 organizations from 92 countries. Our network is built on the deeply-rooted community knowledge of our members and the local expertise of our regional communities. Operating from a place of connectivity and trust, we are able to exchange the cross-border knowledge and tools needed to create a truly global movement that puts an end to waste pollution. GAIA's mission is to catalyze a global shift towards environmental justice by strengthening grassroots social movements that advance solutions to waste and pollution. We envision a just, zero waste world built on respect for ecological limits and community rights, where people are free from the burden of toxic pollution, and resources are sustainably conserved, not burned or dumped.

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# INC-4 booklet

|   |                    |
|---|--------------------|
| <a href="#">1. What the INC-4 could achieve</a>   | <a href="#">1</a>  |
| <a href="#">2. Rules of procedure</a>   | <a href="#">3</a>  |
| <a href="#">3. Priorities for the revised Zero Draft discussion in contact groups</a>               | <a href="#">5</a>  |
| <a href="#">4. A global plastics tax</a>  | <a href="#">21</a> |
| <a href="#">5. Extended Producer Responsibility</a>   | <a href="#">23</a> |
| <a href="#">6. Plastic offsetting, credits and neutrality: false claims and polluting practices</a> | <a href="#">25</a> |
| <a href="#">7. Just transition</a>  | <a href="#">28</a> |
| <a href="#">8. Switching materials or systems?</a>  | <a href="#">30</a> |
| <a href="#">9. The plastics circularity trap</a>  | <a href="#">33</a> |
| <a href="#">10. The plastics treaty and the Basel Convention</a>                                    | <a href="#">36</a> |
| <a href="#">11. "Is there anything there?" Nuclear-assisted chemical recycling</a>                  | <a href="#">39</a> |
| <a href="#">12. Definitions</a>   | <a href="#">41</a> |



# 1. What the INC-4 could achieve

The fourth session of negotiations for a new plastics treaty is the opportunity to make progress on key aspects for an effective response to the global plastics pollution crisis, namely:

## **Binding measures to phase down plastic polymer production**

Member States are presented with an opportunity to opt for a binding production phase down to sustainable levels (see [Section on Primary Plastic Polymers in Chapter 3, page 8](#)). Controls on the production of primary plastic polymers are the key to staying below the 1.5°C threshold and unlocking potential benefits of reuse and recycling as well as reducing externalized costs of plastic production and pollution. Such measures should also provide for bans on the production of hazardous polymers and other chemicals associated with plastics, and problematic and unnecessary plastic products should be controlled and phased out as groups. As proposed by some Member States before the INC-3, a moratorium on additional plastic production capacity and a global plastic pollution fee will further strengthen much-needed supply-side measures (see [Chapter 4: A Global Plastics Tax, page 21](#)).

## **Global design standards for effective reuse and refill systems**

In the revised zero draft, Option 1 features time-bound targets for the deployment of reusable alternatives to single-use plastic products, a key policy to support the effectiveness of reduced use of primary plastics. Provisions on reuse must include reusable products made from other materials with a potential to replace plastic products to allow the best material choice for a given application. Binding global design standards and targets for reuse defined in Annex C.I hold the key for effectiveness of the reuse and refill solutions (see [Section on Reuse in Chapter 3, page 13](#)).

## **Harmonized and more stringent regulations designed to minimize harm from plastic waste management**

The global plastics treaty is an unprecedented opportunity to harmonize and raise the bar for local, regional and national regulations on plastics. It can enable consistent mandatory policy measures which will ensure greater transparency on chemicals used in plastics, cross-border trade and impacts to the community as well as provide science-based and binding criteria for truly environmentally and socially-sound management of plastic waste, throughout collection, recycling, and disposal, while ruling out false claims and polluting practices (see [Section on Waste Management in Chapter 3, page 16](#)). The revised zero draft also includes an option to make extended producer responsibility (EPR) mandatory for plastic products and to harmonize it across countries, which could realize the polluter pays principle, if implemented within certain modalities (see [Chapter 5: Extended Producer Responsibility, page 23](#)).

## **Clarity on scope and procedure that fosters efficiency and allows breakthroughs**

For effective negotiations, INC-4 contact groups can prioritize certain themes and treaty provisions, including objective, primary plastic polymers, hazardous chemicals, plastic products and microplastics, exemptions, just transition, and financing. While consensus is always preferred when possible, the prospect of a vote as a last resort can energize efforts to find common ground and foster breakthroughs (see [Chapter 2: Rules of Procedure, page 3](#)). In addition, anchoring dialogue on scope, principles (see [Section on Objective and Scope in Chapter 3, page 8](#)), and definitions (see [Chapter 12: Definitions, page 41](#)) to related control measures will allow efficient and coherent progress and avoid disjointed conversations leading to inconsistent outcomes.

## 2. Rules of procedure

### The story so far

In **May 2022**, the **Ad hoc Open-ended Working Group** met in Dakar, Senegal, to prepare the work of the plastic treaty Intergovernmental Negotiating Committee (INC). In this context, it agreed to the Draft Rules of Procedure to govern the negotiations process, with the exception of [bracketed text in rule 37](#) on the voting rights of regional economic integration organizations,<sup>1</sup> and forwarded the Draft Rules to INC-1.

Debate on rule 37 continued during the **INC-1** in Punta del Este, Uruguay, without resolution. The INC agreed to apply the rules provisionally, with the exception of bracketed text in rule 37, pending their adoption, which was [postponed until INC-2 to allow for further consultations](#).<sup>2</sup>

During **INC-2** in Paris, France, despite early convergence on rule 37, several delegates broadened the debate to the second sentence of rule 38.1, although the latter had not been bracketed in Dakar. That sentence reads:

*If all efforts to reach consensus have been exhausted and no agreement has been reached, the decision shall, as a last resort, be taken by a two-thirds majority of the representatives of Members who are present and voting.*

The controversy took up half of the INC-2 time at the expense of negotiations. The INC ultimately left rule 38.1 unbracketed but agreed to an interpretive statement recorded in the [meeting report](#), while continuing to provisionally apply the rules of procedure.<sup>3</sup> The interpretive statement is:

*The intergovernmental negotiating committee understands that, based on discussions on the draft rules of procedure for the intergovernmental negotiating committee, there are differing views among intergovernmental negotiating committee members on rule 38, paragraph 1, and its reflection in the report of the intergovernmental negotiating committee on the work of its first session. Therefore, the provisional application of rule 38, paragraph 1, of the draft rules of procedure has been a subject of debate. In the event that rule 38, paragraph 1, is invoked before the rules are formally adopted, members will recall this lack of agreement.*<sup>4</sup>

These Rules of Procedure issues are expected to keep emerging until they are solved and a proactive effort to settle them and adopt the rules is advisable.

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<sup>1</sup> A regional economic integration organization is an organization composed of States that have given the organization certain sovereign powers in the area of economics that are binding on these states. Many treaties accept Parties that are either individual states or regional economic integration organizations. The European Union is an example of a regional economic integration organization, with its single market.

<sup>2</sup> UNEP (2022). [Draft rules of procedure for the work of the intergovernmental negotiating committee to end plastic pollution, including in the marine environment](#), UNEP/PP/OEWG.1/4.

<sup>3</sup> Løvold, M. & Torbjørn Graff, H. (2023, Junio). ["Report from the ministry of magical diplomatic affairs"](#), Medium.

<sup>4</sup> UNEP (2023). [Report of the intergovernmental negotiating committee to develop an international legally binding instrument on plastic pollution, including in the marine environment, on the work of its second session](#), UNEP/PP/INC.2/5.

## Why the right to vote matters, when consensus cannot be reached

Rules of Procedure debate over voting is likely the single most important issue of the entire negotiation process as the decision-making mechanism will determine the level of ambition achievable.

Consensus is usually the preferred mode of decision-making in diplomatic contexts. Indeed, it ensures that no country is forced to accept rules it disagrees with. The prospect of a vote, though, is an important enabler of consensus as whispers of a vote being tabled can encourage countries to converge, or at least abstain, rather than further derail progress. In rare cases, voting may happen, and typically requires a two-thirds majority representing significant convergence, rather than an even split with one vote tipping the balance (simple majority).

A provision for voting is key to delivering a strong and effective treaty that can end plastic pollution with the urgency required - and treaties that lack a voting provision have shown their weakness. For instance, the substance chrysotile asbestos [remains unlisted under the Rotterdam Convention despite a quarter-million deaths every year](#) caused by the substance, and despite the availability of safer alternatives - as a handful of countries have been blocking consensus for nearly 20 years.<sup>5</sup> In effect, the lack of voting means that **the near-totality of countries, most of which are Global South countries, are having their voices censored by a few vetoes**, only six at the 2023 Rotterdam Convention COP. As Senegal [elegantly stated](#) during INC-2, *"consensus kills democracy"*.<sup>6</sup>

The option to vote when consensus cannot be reached is a long-standing practice in UN spaces, negotiations and environmental agreements, including the [UNGA \(Rules 83 and 85\)](#), the [UNFCCC \(Rule 29\)](#), [UNEA \(Rule 49\)](#), the [Stockholm Convention \(Rule 37\)](#), the [Basel Convention \(Rule 34\)](#), the [Montreal Protocol \(Rule 40\)](#), and the negotiation rules for the new legally-binding instrument on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction or [BBNJ \(Paragraphs 18 and 19 of Resolution 72/249\)](#).

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<sup>5</sup> IISD Earth Negotiations Bulletin (2023). [The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade](#).

<sup>6</sup> Løvold, M. & Torbjørn Graff, H. (2023). ["Points of disorder"](#), Medium.



## 3. Priorities for the revised Zero Draft discussion in contact groups

### Table of contents

|  |           |
|--|-----------|
| <b>1. Introduction</b>   | <b>6</b>  |
| <b>2. Recommended approach for INC-4 contact groups</b>                        | <b>6</b>  |
| <b>3. Treaty text comments and recommendations</b>                             | <b>7</b>  |
| Preamble (I.1) & Principles (I.4)  | 7         |
| Objective (I.2) & Scope (I.5)  | 8         |
| Primary plastic polymers (II.1)  | 8         |
| Hazardous chemicals including polymers (II.2)                                  | 9         |
| Plastic products (II.3.a)  | 10        |
| Exemptions (II.4)  | 12        |
| Reuse (II.5.a & b)   | 13        |
| “Alternative plastics” (II.5.d)  | 14        |
| EPR (II.7)   | 15        |
| Recycling (in Recycled content II.5.c., EPR II.7, and Waste management II.9.a) | 16        |
| Waste management (II.9.a)  | 16        |
| Just transition (II.12)  | 18        |
| <b>4. Examples of strong and weak language in the revised zero draft</b>       | <b>20</b> |



## 1. Introduction

The call for written submissions during INC-3 produced a large volume of proposals, inflating the draft plastic treaty text to 68 pages. Many of these additions are unusually weak in terms of syntax and validity as legal text, largely because they were not filtered through discussion in contact groups. Duplication is rife, both of content (e.g. references to recycling in sections unrelated to waste management) and structure (e.g. proposed placeholder on scope exclusions duplicates existing article on exemptions). Many additions are out of place, making the text disorganized and making it harder to compare alternative proposals (e.g. language on products in section on polymers). This is partly due to the failure to give the INC Chair any leeway to adjust Member State comments to guarantee baseline quality and non-duplication and ensure effective negotiations at INC-4.

Member States may also wish to carefully consider the order in which they discuss themes and revised zero draft provisions during INC-4 contact groups (see [Section 2](#) below). [Section 3](#) outlines the revised zero draft's treatment of, as well as some suggestions for, a number of treaty provisions. [Section 4](#) is a table featuring examples and patterns of stronger and weaker language alternatives in the revised zero draft.

## 2. Recommended approach for INC-4 contact groups

The draft treaty text is too long to attempt a full reading during INC-4 contact groups, nor are many paragraphs ready for such a reading. Therefore, GAIA recommends **prioritizing the following themes or treaty provisions for discussion in INC-4 contact groups:**

- Objective (I.2.)
- Primary plastic polymers (II.1)
- Hazardous chemicals (II.2)
- Plastic products and microplastics (II.3)
- Exemptions (II.4)
- Financing (III.1)
- Just transition (II.12)

Following INC-4, the following topics could be also approached through intersessional work: Reuse (II.5a&b); Recycled content (II.5.c.), EPR (II.7) and Waste management (II.9.a). Remaining provisions would benefit from being considered last, since they depend largely on the above-mentioned provisions.

Member States may wish to consider alternative approaches to draft treaty text for discussion at INC-4, retaining or refining the Options 1 to reflect high ambition, and consolidating other options into a low ambition alternative, to capture the full spectrum of views, without making the draft unmanageably long and repetitive. A Legal Drafting Group can provide assistance in this regard.

### 3. Treaty text comments and recommendations

#### Preamble (I.1) & Principles (I.4)

The role of a preamble and text on principles in a treaty is to **clarify the spirit of, and guiding principles for, the treaty**. The Preamble and Principles articles currently have significant overlap, while neither fully serves its function within the treaty text. Both have important **gaps on relevant principles of environmental and international law**. At the same time, they **include out-of-scope and vague concepts that add confusion** rather than clarity for Parties. The **dedicated article on principles** is important to reference principles of international and environmental law relevant to the treaty in an adequate manner, and ensure their legal force, but gaps and irrelevant elements must be addressed.

In the revised zero draft, the preamble text mentions national circumstances and other ground for exemptions. Legitimate exemptions should be dealt with under Section II.4 on exemptions and not duplicated in the preamble. The preamble also includes economic concepts (sustainable development) and value judgements (the *“important role of plastics in society”*) that are not appropriate or necessary in an environmental treaty. In addition, it has only patchy references to principles of environmental law, and serious gaps (no references to the principles of prevention and intergenerational justice, the human right to health, transparency), making a dedicated article on principles (I.4) all the more necessary.

In the revised zero draft, the principles article lacks references to human rights, including the rights to health and a clean environment, despite requests by several Member States to include them. The Principles article also lacks references to the rights of Indigenous Peoples, and to intergenerational justice. In addition, it creates confusion with references to elements that are not principles of environmental law, but types of policy tools (e.g. Extended Producer Responsibility, EPR), policy concepts (e.g. circular economy, sustainable development) or vague terms (e.g. *“bottom-up approach”*, *“the right to choose policy mixes”* *“general principles relating to marine pollution”*).

#### Elements for an effective Preamble and article on Principles:

- **Finalize the treaty preamble at the end of negotiations** to reflect the spirit of the text;
- Focus the preamble on serving as an introduction to the treaty, **avoiding duplication with dedicated articles on Principles (I.4) or Exemptions (II.4)**;
- **Steer clear of concepts out of scope for environmental treaties** (e.g. models of economic development; marketing language on the importance of plastics in society).
- In the Principles article, include **human rights**, including the rights to health and a clean environment, as well as the **rights of Indigenous Peoples**, and **intergenerational justice**;
- **Focus the Principles article on principles of international and environmental law**, and **avoid duplication with other articles** by removing references to specific policy tools (e.g. EPR for the polluter pays principle); exclude vague concepts and concepts that do not pertain to environmental law.

## Objective (I.2) & Scope (I.5)

The treaty objective and scope are currently addressed in separate articles, although they are intrinsically linked. GAIA considers that **a single article on both objective and scope is most effective**, given their strong interrelations. The text must respect **aspects already defined in [UNEA Resolution 5/14](#)**.

In the revised zero draft, the article on Scope is unnecessarily unruly with 16 options for something that has already been determined by [UNEA Resolution 5/14](#). This large number of options makes a line-by-line reading in contact groups near-impossible. Most content in the Scope section are Member State comments rather than actual legal text proposals.

### Elements for an effective Objective and Scope:

- Consider addressing Objective and Scope in a single article;
- Ensure the Objective and Scope align with the treaty negotiations mandate in [UNEA Resolution 5/14](#) to “end plastic pollution” “based on a comprehensive approach that addresses the full life cycle of plastic”;
- Consider the following text for Objective & Scope:  
*“The **objectives** of this instrument are to end plastic pollution and to protect human health and the environment, based on a comprehensive approach that addresses the full life cycle of plastic.*
- The **scope** of this instrument covers all plastics and associated pollution along the full life cycle of plastics, from the acquisition or generation of raw materials from natural resources until the very end of life of plastics and associated pollution impacts.”*
- Include a definition of “life cycle” that aligns with the one defining scope in the treaty Definitions article for consistency and clarity of implementation.

## Primary plastic polymers (II.1)

Most countries do not produce plastics, yet all are affected by the exponential increase of plastic production, and the pollution that goes along with it. **Shrinking the size of the plastic problem by phasing down plastic polymer production to sustainable levels consistent with human health, human rights and planetary boundaries** will benefit all countries. A plastic production phasedown of at least 70% from 2019 levels by 2050 to stay within 1.5 of global warming.<sup>7</sup> A production phasedown will also empower measures further downstream. While there is no way to overcome the plastic pollution crisis through waste-management alone, controls on the quantity of plastic production are the key to unlocking the potential benefits of reuse and recycling (see [Chapter 9: The Plastics Circularity Trap, page 33](#)). Supply-side controls will also reduce the cost of future remediation and clean up.

In the revised zero draft, Option 1.1 remains the strongest approach currently in the draft providing for a binding production phasedown target specified in Annex A. Additions made during and following INC-3 are either to

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<sup>7</sup> Eunomia & Zero Waste Europe (2022) [Is Net Zero Enough for the Materials Production Sector?](#); CIEL (2023). [Reducing Plastic Production to Achieve Climate Goals](#).

remove any obligation on primary plastic polymers, to make the provisions non-binding, or weaken them with references to vague exemptions. Meanwhile, proposals for a moratorium on additional plastic production capacity made by some Member States are missing. Similarly, proposals for a global plastic pollution fee made by some Member States as a market-based measure are missing.

#### **Elements for effective measures on Primary polymers:**

- Opt for **a binding production phasedown to sustainable levels** (Option 1.1), with global target levels and phasedown schedules detailed in Annex A, open to strengthening as new data on environmental and health impacts emerge;
- Further develop the text in common provisions paragraphs about market-based measures such as a **global plastic pollution fee**, and **removing plastic production subsidies**;
- Add a reference to a **moratorium on additional plastic production capacity**;
- Remove text opening loopholes based on national circumstances or otherwise and let Article II.4 on Exemptions coherently manage exemptions to treaty obligations.

#### **Hazardous chemicals including polymers (II.2)**

Reducing the gravity of the plastic pollution problem by **removing hazardous chemicals including polymers from plastic products and materials** will protect health and the environment, as well as empower measures further downstream. Controls on the chemical composition of plastic products and materials are **vital to ensuring safe and high-quality recycling**. The treaty should regulate chemicals including polymers as **groups** and push for **chemical (including polymer) simplification**. It should apply the **no data no market principle** to reduce toxics circulation and exposures through plastics. The control measure should also provide for **bans on the production of hazardous polymers and other chemicals** associated with plastics (currently Option 4, 1). Specifically, some harmful polymers that have a high toxicity profile and are also challenging to recycling, such as PVC, are good candidates for a hazardous polymer production ban.

In the revised zero draft, the proposals to replace the notion of chemicals “of concern” with “hazardous” chemicals would provide more clarity as this is a better-understood term internationally. Options 1 and 4 and provisions on transparency, marking, labeling, tracking, production provide room for effective measures on hazardous chemicals. The notion of controlling chemicals as groups and of chemical simplification is only present in the text in the proposed ban on use of harmful chemicals in products (Option 1.1) and should be extended to bans on the production of such chemicals as well (Option 4).

Meanwhile, most additions from INC-3 attempt to replace Option 1 with much weaker alternatives. A troubling proposal would allow hazardous chemicals to be allowed during reuse and recycling operations (sub-paragraph b of common provisions for Options 1 and 2). The baseless claim that hazardous chemicals in plastics are already controlled under other conventions is baseless also appears in the text, when in fact existing environmental

treaties regulate only 1% of chemicals used in plastics.<sup>8</sup> Similarly, one legally-absurd proposal suggests the treaty governing body should decide what the Stockholm and Rotterdam Conventions should do on hazardous chemicals (Option 5 on p.15).

#### **Elements for effective measures on hazardous chemicals including polymers:**

- **Prohibit the production of hazardous polymers and other hazardous chemicals** associated with plastics (Option 4.1), as well as their **use (deliberate) or presence (non-intentional) in plastic products and materials** (Option 1.1.);
- Prohibit hazardous chemicals including polymers **as groups/families** (present in Option 1.1, add to Option 4 and Annex A.II lists) to avoid regrettable substitution;
- Detail the **process for the treaty scientific and governing bodies to update Annex A.II lists** of groups of hazardous chemicals including polymers for elimination;
- **Define** chemicals to include **additives, processing chemicals, polymers, oligomers, monomers, and non-intentional additive substances (NIAS)**;
- Require **harmonized disclosure of chemical composition and associated harms** through a mandatory globally harmonized transparency system for the chemical composition of plastic materials and products, (strengthen paragraphs c and d for common provisions for Options 1 and 2, and link them to Article II.13 on transparency).<sup>9</sup>

### **Plastic products (II.3.a)**

The global plastics treaty is an unprecedented opportunity to **harmonize and raise the bar** for the myriad of local, regional and national regulations on plastic products that governments have taken to confront the plastic pollution crisis. Consistent global binding obligations will **facilitate compliant cross-border trade and effective enforcement**, which has been a challenge for existing local and national plastic product policies. Measures on plastic products address **plastic over-consumption** while supporting measures on plastic production further upstream.

The revised zero draft still contains Option 1 that leaves scope for achieving effective controls, although it will need modifications to bring it in line with the Nordic Council proposal.<sup>10</sup> Option 2 proposes inconsistent action at the national level on products identified at the national level based on global criteria in Annex B.I., but without adhering to global lists, foreshadowing trade disputes when inconsistent interpretation of global criteria inevitably occurs. Option 3 proposes inconsistent and optional national action without reference to any global criteria or lists, which would make cross-border trade and enforcement at borders extremely challenging.

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<sup>8</sup> BRS (2023). [Global governance of plastics and associated chemicals](#). Secretariat of the Basel, Rotterdam and Stockholm Conventions, United Nations Environment Programme, authored by Karen Raubenheimer & Niko Urho.

<sup>9</sup> For more detail, see HEJSupport, Swedish Society for Nature Conservation and groundWork (2024), [Transparency and traceability systems for plastics: Design and practicability considerations](#).

<sup>10</sup> Nordic Council of Ministers (2024). [Global criteria to address problematic, unnecessary and avoidable plastic products](#). Authored by Karen Raubenheimer & Niko Urho.

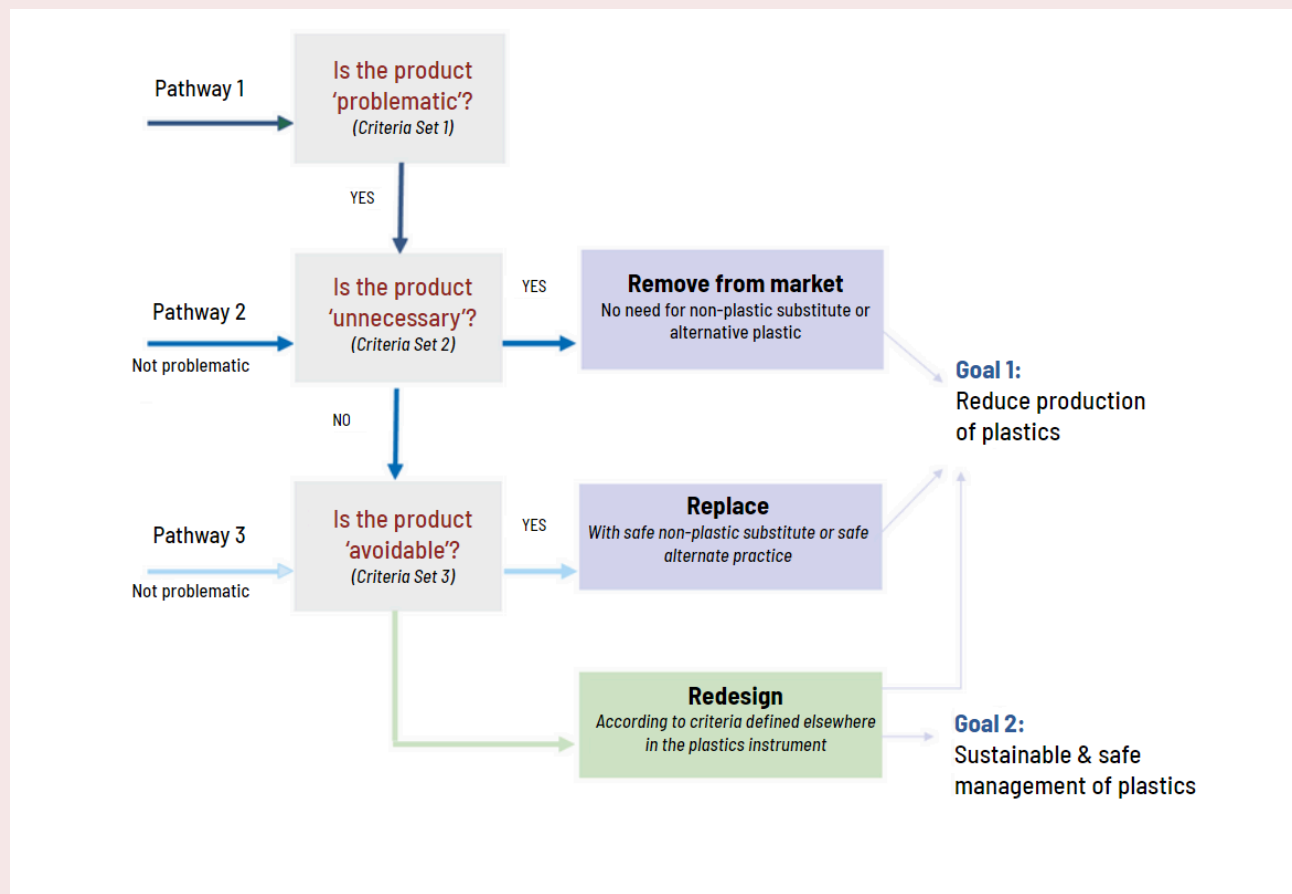


Several additions from INC-3 propose to either cancel controls on plastic products (Option 0), or propose scattered grounds for exemptions, including technical feasibility of alternatives as well as national circumstances and capabilities, instead of referring to a coherent approach to exemptions under the relevant article (II.4).

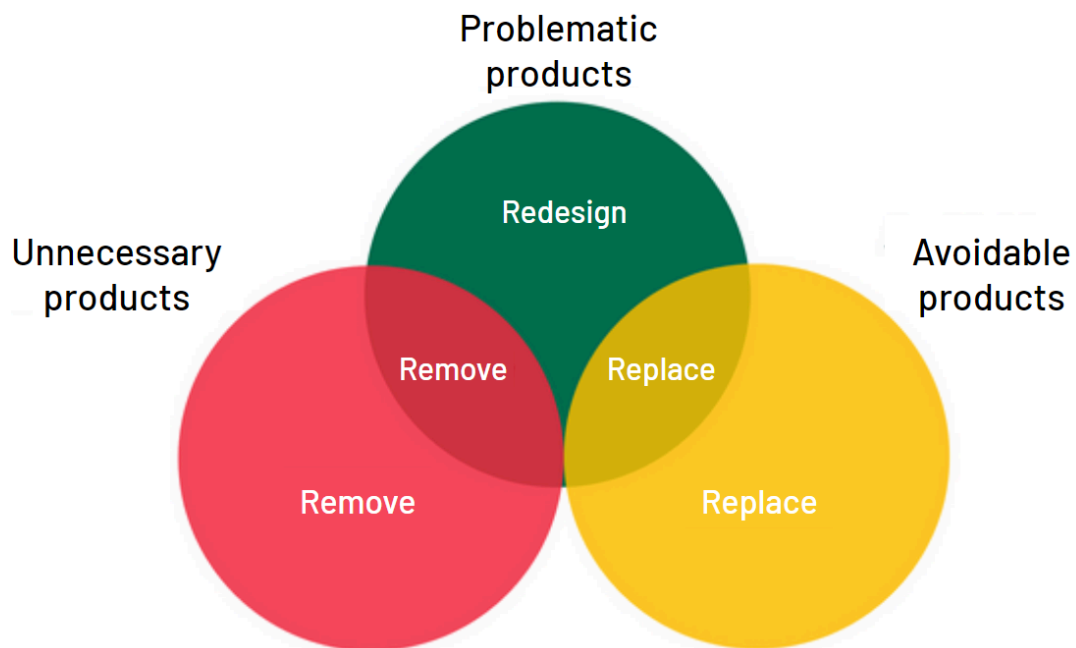
**Elements for effective measures on Products and primary microplastics:**

- The treaty should consider **controls by groups of plastic products that are either:**
  - **problematic** for human health or the environment, including single-use and short-lived products and products challenging to manage as waste; in particular, plastic products made from materials most likely to emit secondary microplastics, such as plastic foams, textiles, and oxo-degradable plastics should be controlled and phased out as groups.
  - **unnecessary** for vital social functions and thus can be eliminated without being replaced;
  - or that can be **avoided** by scaling up reuse systems and refill, or non-plastic alternatives.
- Criteria for these three elements should be detailed in Annex B.I., and corresponding lists in Annex B.II.
- Problematic plastic products that cannot be directly eliminated or avoided, must be redesigned in line with design requirements in Article II.5 “Product design, composition and performance”.

The Nordic Council elegantly summarizes these elements in a recent report,<sup>11</sup> that includes the following diagrams:



<sup>11</sup> Ibid.



The treaty text should also include the following definitions:

-“**Plastic product:** A product or component made wholly or partly from plastic materials, including intermediate products used to manufacture other products (e.g. pellets and other primary microplastics, polystyrene beads, rolls of film).” (adapted from EU [Directive 2019/904 on the reduction of the impact of certain plastic products on the environment](#)).

-“**Short-lived product:** A product with a use phase of less than three years.”

-“**Single-use product:** A product that is not conceived, designed or placed on the market to accomplish, within its life span, multiple trips or rotations by being returned to a producer for refill or reused for the same purpose for which it was conceived.” (adapted from EU [Directive 2019/904](#)).

## Exemptions (II.4)

Under any regulation, exemptions can be a slippery slope towards loopholes. At the same time, Parties may have **legitimate grounds to seek specific and time-bound exemptions** to ensure they can deliver **critical services** to their societies, such as safety. Ensuring that all derogations are regulated under a **single coherent exemptions process** will allow for legitimate exemptions without sacrificing treaty effectiveness.

In the revised zero draft, Option 1 remains the strongest approach, drawing on the Minamata Convention’s regime of Parties registering exemptions, with a limited number of extensions, and a sunset period for all exemptions. The exemptions article is weakened by attempts to create broad and often vague derogations elsewhere in the text, such as by limiting the treaty’s scope, proposing that some measures not apply to developing countries, subjecting global obligations to national priorities and circumstances, and more (see table below in Section 4).

### Elements for an effective exemptions mechanism:

- Define a **clear and coherent exemptions mechanism** under Article 4 and **remove derogations and scope exclusions elsewhere** in the treaty text (see table below in Section 4). Include exemption application details in an Annex for ease of amending.
- Ensure that **only context-specific, time-bound exemptions from bans on specific products** are granted, for uses essential to the critical functioning of society, such as safety. Avoid general and non time-bound exemptions.
- Consider a **hybrid approach** with a Minamata Convention approach (lower bar) for early-onset phaseouts (e.g. effective for up to 2 years from treaty entry into force), with a sunset date of 3 to 5 years after the phaseout date. For exemptions from medium and later-onset phaseouts (e.g. effective later than 2 years after treaty entry into force), and all extensions on exemptions, consider an essential use approach, as practiced under the Montreal Protocol (more careful evaluation).
- An **essential use approach** allows specific, time-bound exemptions for specific uses of plastic products that serve a critical function for society (e.g. PPE) in the absence of safer substitute products or processes.
- Parties, especially **SIDS and LDCs**, whose access to financing does not cover their implementation needs, should be granted **leniency under the treaty compliance mechanism**, rather than managed under the exemptions mechanism (unlike what OP4 bis 1 proposes).

### Reuse (II.5.a & b)

Success of plastic reduction measures will depend on the scaling up of accessible sustainable alternatives. **Reuse and refill systems are often the most sustainable option** as compared to single-use substitutes made from non-plastic materials.

In the revised zero draft, Option 1.1 is the most effective approach as it provides for binding global design standards for reuse defined in Annex C.I. Option 1 features time-bound targets for the deployment of reusable alternatives to single-use plastic products, a key policy to support the effectiveness of reduced use of primary plastics without burden shifting. Option 5 could be a more concise alternative that also features binding targets but lacks the global guidance referenced in Option 1.

Other options in the text are weak as they don't have binding global standards or targets for reuse, refill, refurbishment and repair. The options also all mix reuse and recycling, which is unhelpful: recycling should only be scaled up once hazardous chemicals including polymers have been phased out of the plastics in our economy, otherwise recycling will circulate toxics and increase toxic exposures that harm human health and the environment.

### Elements for effective measures on reuse:

- Provisions on reuse cannot be confined to plastics and must **include reusable products made from other materials** with a potential to replace plastic products, since effective reuse systems are material-agnostic to allow the best material choice for a given application.<sup>12</sup>
- **Binding global design standards and targets for reuse** defined in Annex C.I are key for effectiveness.
- **Separating measures on reuse, refill, refurbishment and repair**, from measures on recycling, would provide more clarity for compliance and implementation, since unlike reuse, recycling falls within the realm of waste management (section II.8).

### “Alternative plastics” (II.5.d)

The **problematic notion of “alternative plastics”** to refer to biobased, biodegradable, compostable plastics and plastics with high recycled content subsists in the revised zero draft. These materials are all plastics and should be controlled as such, rather than alongside non-plastic substitutes (as Option 4 suggests). Mounting evidence shows that **these plastics may cause multiple harms**, from deforestation, increased use of agrochemicals, and food insecurity (biobased plastics)<sup>13</sup> to disruption of soil health (biodegradable and compostable plastics),<sup>14</sup> microplastic emissions<sup>15</sup> and concentration of toxics (through recycling).

The concept of “alternative plastics” is not needed in the treaty since the implementation of measures II.3 on hazardous chemicals and II.5 on design will ensure that plastics that remain in the economy are lower in toxics and otherwise environmentally-sound. Such plastics would not be “alternative” but would become the norm, that should still fall within sustainable levels of production. The draft currently suggests increased production of so-called “alternative plastics”, contradicting plastic production reduction targets under measure I.1 Primary plastic polymers.

### Recommended approach for “alternative plastics”

- GAIA recommends the **deletion of Article 5.d “alternative plastics”**, given its redundancy with sections II.2, II.5.a., II.5.b. and II.5.c., and contradiction of section II.1.
- Instead of spreading the fiction of harm-free plastics, the treaty should minimize the harm from plastics that

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<sup>12</sup> A reuse system is a comprehensive system designed for multiple circulations of reusable packaging which remains in the ownership of the reuse system and loaned to the consumer. See Global Plastics Policy Centre (2023). [Making Reuse a Reality: A systems approach to tackling single-use plastic pollution.](#)

<sup>13</sup> Gerassimidou, S., Martin, O. V., Chapman, S. P., Hahladakis, J. N., & Iacovidou, E. (2021). [Development of an integrated sustainability matrix to depict challenges and trade-offs of introducing bio-based plastics in the food packaging value chain.](#) *Journal of Cleaner Production*, 286, 125378.

<sup>14</sup> Accinelli, C., Abbas, H. K., Bruno, V., Nissen, L., Vicari, A., Bellaloui, N., Little, N. S., & Thomas Shier, W. (2020). [Persistence in soil of microplastic films from ultra-thin compostable plastic bags and implications on soil \*Aspergillus flavus\* population.](#) *Waste Management*, 113, 312–318.

<sup>15</sup> Stapleton, M. J., Ansari, A. J., Ahmed, A., & Hai, F. I. (2023). [Evaluating the generation of microplastics from an unlikely source: The unintentional consequence of the current plastic recycling process.](#) *Science of The Total Environment*, 902, 166090.

may still be needed to perform essential functions in our societies, and ensure that the total production of plastics, including biobased, biodegradable, compostable and recycled plastics, remains within sustainable levels. **The conjunction of measures II.1 (Primary plastic polymers), II.2 (Hazardous chemicals), and II.5.a-c (Sustainable design guidelines and targets) is sufficient** to ensure this.

## **EPR (II.7)**

Extended producer responsibility (EPR) schemes are an expression of the **polluter pays principle** and have attracted significant interest from policymakers in recent years. EPR is a **policy tool and not a principle**. They are intended to **shift the cost of waste management of and pollution from specific products** from the taxpayer to the producers, importers and distributors and incentivize **eco-design**. Whether or not EPR schemes deliver on these aims all depends on their **setup and implementation details**.

Current EPR schemes need strengthening in the following respects:

- be **mandatory** rather than voluntary;
- have **government representatives and oversight** in their governing bodies, as well as **key stakeholders** including waste pickers, recycling and reuse operators, environmental and civil society organizations, and municipalities, and make their **decisions and data transparent**;
- have **eco-modulation** amounts high enough to be effective (e.g. dissuasive penalties)
- cover the **full cost of plastic waste management**, including the management of residual waste fractions, rather than focusing only on recycling streams;
- **prioritize reduction and reuse over recycling**, in line with the zero waste hierarchy
- adequately integrate and fairly compensate **waste pickers**.

In the revised zero draft, Option 1 proposes to make EPR mandatory for plastic products and to harmonize it across countries based on criteria defined in annex D. This brings the opportunity to improve EPR standards globally, in line with the recommendations outlined above. Other options are weaker because they fail to require such binding global EPR standards.

### **Elements for effective measures on EPR:**

- Opt for Option 1 to have **mandatory EPR that is globally harmonized**, and strengthen Option 1 with a reference to **waste picker inclusion**;
- Include the following mandatory **EPR scheme modalities in Annex D**: mandatory schemes; government participation and oversight over governance structures; participation of key stakeholders including waste pickers, recycling and reuse operators, environmental and civil society organizations, and municipalities; decision-making and data transparency; effective eco-modulation amounts; full cost coverage; respecting the

zero waste hierarchy by prioritizing reduction and reuse before recycling; adequate integration of and fair compensation for waste pickers.

### **Recycling (in Recycled content II.5.c., EPR II.7, and Waste management II.9.a)**

Recycling **delays the disposal of plastic waste and associated harms**, particularly toxic and carbon emissions from open burning or incineration. Those benefits are largely owed to the **contribution of waste pickers** to plastic waste collection and sorting for recycling. However, recycling **does not prevent the harms associated with disposal**: recycled plastic content does a limited number of loops in the economy before ending up in landfills or being burnt. The **“circular economy of plastics” is largely nonexistent**, and this concept should therefore not feature in the treaty text.

Environmental benefits from recycling **only occur once material overproduction is addressed**. When controls on overproduction are absent, recycling is a net burden on the environment, since recycling process emissions and resource use are not offset by avoidance of virgin material production; **recyclate production happens in addition to virgin material production, and does not automatically displace it**. In addition, regulations are currently lacking to guarantee the production of toxic-free plastic recyclate.

The revised zero draft is replete with references to recycling (105), many of which are out of place in sections not dealing with waste management. Some proposed measures are based on flawed assumptions about plastic recycling, such as *“increasing of subsidies and any other incentives to the production of secondary plastics”* to help reduce plastic production to sustainable levels, in the absence of controls on the overall quantity of plastics produced. Several measures propose recycling requirements such as recycling rate or minimum recycled content targets.

#### **Elements for effective measures on recycling that are safe for health and the environment:**

- **Omit references to the “circular economy” of plastics** or “plastics circularity” in the treaty text
- Move all references to recycling to **Section II.8 on Waste management**
- Schedule requirements on recycling rates and content in Annex C **only after measures on hazardous chemicals including polymers have been fully implemented**, to end the circulation of toxics.
- Ensure that **EPR standards** in Annex D respect the zero waste hierarchy by **promoting reduction, reuse and repair before recycling**, and **excluding toxic recycling**.

### **Waste management (II.9.a)**

All forms of plastic waste management harm the environment, health and human rights. **Plastic burning**, whether during open burn or controlled burning in incinerators, cement kilns, or pyrolysis, and even in state-of-the-art



facilities,<sup>16</sup> generates significant toxic and carbon emissions as well as hazardous ashes laden with microplastics.<sup>17</sup> US EPA scientists have found some chemicals emitted by chemical recycling to be so dangerous that they expect all people exposed to them over a lifetime to develop cancer.<sup>18</sup> **None of these harms are adequately addressed in Basel Convention guidance, and neither does it equip governments to tell apart harmful waste-management technologies from safe ones.**

The new plastics treaty will have a focus on plastics associated pollution, which the Basel Convention lacks. **The new plastics treaty will therefore be the best avenue to establish science-based and binding criteria for truly environmentally and socially-sound management of plastic wastes** that upholds environmental justice and human rights and protects planetary boundaries. Those criteria could be included in an annex for ease of amendment in light of new evidence. Only clear criteria will prevent infrastructure lock-ins into polluting technologies like plastic-to-fuel and (co)incineration that will only shift the burden of plastic pollution instead of resolving it at the source.

The revised zero draft text is heavily biased towards the waste phase of the plastics life cycle, with over 181 references to waste. Similarly, there are many (77) references to technology and technological innovation without any mention of health or environmental standards, as if technology was intrinsically always beneficial for the environment. In fact, attempts are being made to promote dangerous “chemical recycling” and “plastic-to-fuel” technologies that are toxic and energy-intensive and as such, not considered as environmentally-sound under the Basel Convention.

Common provisions for Options 1-3 provide for prohibition and other regulation of waste management practices that emit hazardous substances, including from plastic burning, as listed in Annex F.IV. This is welcome, however hazardous emissions are but one aspect of harm to health and the environment from plastic burning operations, whether controlled or uncontrolled. Options 1, 2 and 4 also provide for global guidance on environmentally-sound plastic waste management under the treaty, which is needed. Option 3 would make the plastic treaty reliant on the Basel Convention technical guidelines on plastic waste, ignoring their significant shortcomings.<sup>19</sup>

Option 1 is the most prescriptive with harmonized collection, recycling and disposal targets at the global level, set in Annex F.I. While it is the most ambitious option, the notion of disposal targets is antithetical to the zero waste hierarchy, which seeks to maximize waste reduction and recycling in order to minimize final disposal. Option 2, in contrast, leaves such targets to be determined nationally, based on globally-harmonized indicators. Option 4 leaves all waste management actions to be determined at the national level, without requiring targets.

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<sup>16</sup> Zero Waste Europe & Toxico Watch (2018). [Hidden emissions: A story from the Netherlands.](#)

<sup>17</sup> Yang, Z., et al. (2021). [Is incineration the terminator of plastics and microplastics?](#) *Journal of Hazardous Materials*, Vol. 401, 123429; Shen, M., et al. (2021). [Can incineration completely eliminate plastic wastes? An investigation of microplastics and heavy metals in the bottom ash and fly ash from an incineration plant.](#) *Science of the Total Environment*, 779, 146528.

<sup>18</sup> Lerner, S. (2023). [EPA Approved a Fuel Ingredient Even Though It Could Cause Cancer in Virtually Every Person Exposed Over a Lifetime.](#) *Pro Publica.*

<sup>19</sup> BAN, EIA and GAIA (2023). [Bridging the Basel Convention Gaps with the Future Plastics Treaty](#)

## Elements for effective measures on waste management

- Include in Annex F **binding criteria for environmentally and socially-sound management of plastic wastes** that upholds environmental justice and human rights and protects planetary boundaries;
- Condition **all waste management financing, technology transfer and technical assistance to those criteria**, to prevent lock-ins into polluting technologies that merely shift the pollution burden to new territories and communities;
- **Prohibit plastic burning** and other waste management operations that emit hazardous substances, including plastic-to-fuel operations and “chemical recycling”;
- Emphasize **collection targets and safe, toxic-free recycling targets, but not disposal targets** as the zero waste hierarchy aims to minimize final disposal in favor of operations that preserve materials rather than destroying them.

## Just transition (II.12)

Just transition is a topic gaining momentum in the plastics treaty negotiations. It implies a shift for the **most vulnerable groups involved in or affected by the plastic life cycle**, such as waste pickers, other workers, Indigenous peoples, and fenceline communities, from a linear economic model dependent on fossil fuel extraction and overproduction of plastics, to a **regenerative economy** that ensures their livelihoods, fulfills their rights, and **integrates them into new non-polluting systems such as reuse and repair**.

In the revised zero draft, Option 1 remains the most effective approach as it is binding and explicitly mentions several important groups including waste pickers and Indigenous Peoples.

- Option 1 is also the most robust because it details specific policies and measures to promote and enhance livelihoods, opportunities, work environment and conditions with a particular focus on workers involved in the plastic value chain (b, c, d, e, f, g).
- Option 1(g) advocates reserving a portion of EPR funds to improve infrastructure, opportunities, and skills for workers in the waste management sector.
- Options 2 and 3 are very similar and lack the policy and target group details provided in Option 1, making them less effective.
- In general, the measures regarding just transition contemplated in the proposed options mainly focus on the labor aspect, with direct benefits for workers involved in waste management. However, they overlook the transition that should be considered for other affected communities and lack consideration of potential adverse impacts from transition policies for other groups.

### Elements for effective measures on just transition:

- Just transition measures must **remedy past and current harm** and **ensure non-repetition**, so that the transition is beneficial for all workers, communities and territories.
- Measures must serve all communities and groups currently affected by plastic pollution
- Measures should include **remediation of territories** and **reparations for groups** that have been harmed by the life cycle of plastics. These include territories affected by the extraction of fossil fuels used as raw materials for plastic production, petrochemical workers exposed to toxics in processing plants, and waste pickers who have worked informally and whose work has historically not been recognized, among others.
- The treaty text must include a **definition of just transition in the context of plastics** that reflects the priorities of all affected communities, groups, and territories, expanding on measures proposed by the ILO.
- **Indigenous and local knowledge** must be integrated to best promote and facilitate a just transition.



#### 4. Examples of strong and weak language in the revised zero draft

| <b>Stronger language</b><br>(e.g. more binding or more specific)   | <b>Weaker language</b><br>(less/not binding, less/not specific)  |
|--|--|
| Obligation (binding)   | Guidance (non-binding)   |
| <i>Each Party</i>  | <i>Parties</i>   |
| <i>Shall</i>   | <i>Should</i><br><i>May</i><br><i>Are encouraged to (consider)</i><br><i>Could</i>   |
| Clear terms for immediate bans<br><i>Eliminate</i><br><i>Not allow</i><br><i>Prohibit</i><br><br>Clear terms for gradual or partial reduction<br><i>Reduce</i><br><i>Phase down</i><br><i>Restrict</i> | Vague terms that don't translate into clear and consistent obligations<br><br><i>(Necessary / appropriate) measures</i><br><i>Regulate</i><br><i>Manage</i><br><i>Optimize</i>   |
| N/A  | Additions that remove or dilute the obligation<br><br><i>Where feasible / where appropriate / as appropriate / to the extent possible</i><br><i>Nationally-determined</i><br><i>According to national circumstances / capabilities / capacity / priorities / laws</i><br><i>The right to choose policy mixes</i><br><i>Bottom-up approach</i><br><i>Consistent with national laws</i><br><i>Based on national criteria</i><br><i>Subject to available scientific results</i> |



## 4. A global plastics tax

Pollution fees are a policy tool to translate the polluter pays principle into practice. They play a different and complementary role to EPR, and are already used by many countries to tackle single-use plastic products. Here, we propose a Global Plastic Pollution fee on plastic polymers production with an upstream emphasis.

### What a Global Plastic Pollution Fee could achieve

The Global Plastic Pollution Fee could be a **global financing tool** enabling Parties to fully implement the future legally binding treaty. It could cover, in particular:

- **Pollution prevention and remediation costs** e.g. for upstream, transboundary and legacy plastic pollution, that would also not be covered by national EPR schemes (e.g. pellet spills);
- **Plastic waste management costs**, especially infrastructure costs in the Global South, particularly in LDCs and SIDS (EPR schemes typically mainly cover operating waste management costs<sup>20</sup>); and operating costs for categories of products likely not to be covered by EPR schemes initially.

The Global Plastic Pollution Fee is also necessary as an **upstream economic instrument** targeting polymer producers, to help implement the mandatory reduction targets for virgin plastic production that must be included as a priority in the future treaty. While the fee could in theory send a price signal to help shrink the market share of primary (“virgin”) plastics in favor of recycled plastic polymers (assuming that plastic recyclate is available in sufficient quantity and quality, free from chemicals of concern), there is no strong enough scientific evidence so far that a fee would in itself induce a reduction of production of or demand for primary plastics.<sup>21</sup>

Hence, the Global Plastic Pollution Fee should **never be considered as an alternative to binding production controls such as a production cap and phasedown to sustainable levels or a moratorium** on additional primary plastic production capacity.

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<sup>20</sup> For further analysis of the complementarity between financing that would be coming from EPR Schemes and financing coming from the Global Plastic Pollution Fee, see section 5.1 of [The Plastic Pollution Fee Design Study, Minderoo Foundation, 2023](#)

<sup>21</sup> “Historical price fluctuations have generally not resulted in a reduction in primary plastic polymer demand, suggesting inelastic demand” (See section 6.3.2. – How will demand for polymer respond to a Fee ? in The Plastic Pollution Fee Design Study, Minderoo Foundation, 2023); In their [Global Rules Scenario toward Ending plastic pollution by 2040](#), the Nordic council of Ministers also states that “In theory, a virgin plastic fee could reduce plastic demand over time; however, the analysis found no publicly available data to provide estimates. Therefore, the model behind this analysis does not assume any impact on plastic demand from the application of a virgin plastic fee.”

## Points to consider

**A global fee on plastic polymers:** the Global Plastic Pollution Fee should be harmonized and coordinated at the global level. Differentiated fees (at the country or regional level) would fail to ensure a level playing field and risk displacing production to countries with lower fees. Non-Parties should be subject to border adjustment taxes.<sup>22</sup>

**Consider a lower fee for secondary (recycled) plastic production:** Both primary and secondary plastics generate pollution, wastes and associated costs. A two-tier fee system could cover both primary and secondary plastic production, where recycled polymers would be subject to a lower rate. This would help limit the use of plastics to its most beneficial, high-value durable applications (e.g. in vehicles, infrastructure and electronics), and ensure that recycling is not used to greenwash continued single-use plastic production.

**Simplicity:** Eco-modulation of the fee should not be considered, neither based on polymer or additive profile, nor on feedstock sourcing (e.g. bio-based vs. fossil-based), or on end-of-life behavior (conventional vs. “compostable” or “biodegradable”) as all plastics generate pollution. Fee simplicity will ensure efficient implementation and prompt generation of funds much needed by Parties. Issues such as presence of chemicals of concern in primary polymers should not be addressed through the price signal, but through phase out obligations.

**End primary plastic production subsidies,** both direct and indirect (including any type of fiscal or commercial incentive): The treaty must prohibit such subsidies and take them into account when setting border adjustment taxes for non-Parties. Without ending plastic production subsidies, the Global Plastic Pollution Fee’s effectiveness as a market-based instrument will be greatly undermined. Subsidies must be ended for all upstream activities, such as sourcing of plastic feedstocks from hydrocarbons, production of plastic precursors, as well as assistance provided to state-owned enterprises and underpricing policies.<sup>23</sup>

**Coordination and use of the fee:** the Global Plastic Pollution Fee would be collected by plastic-producing Parties, with coordination and control from the treaty’s financing mechanism. Plastic polymers production data should also be made public to ensure both the collection of the fee and the monitoring of phase-down trajectories. Producing countries would retain a share of the fee to cover at least fee collection costs, and the mutualized share would be managed and distributed by a dedicated fund. The allocation rules would have to take into account the need for differentiation among Parties in favor of Least Developed Countries (LDCs) and Small Island Developing States (SIDS) in particular. It should also be anticipated that the global budget of the dedicated will decrease after a few uses, following the implementation of the phase-down trajectories for virgin plastic production.

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<sup>22</sup> Minderoo Design Study, Annex D-4 "Prevention of Free Riding in Limited Ratification Scenarios" section.

<sup>23</sup> For further data and input on subsidies to plastic production, see [QUNO and IUCN joint submission prior to INC3](#), June 2023 and CIEL’s report [Tackling Subsidies for Plastic Production](#), October 2023.



## 5. Extended Producer Responsibility

### What are EPR schemes?

EPR is one expression of the “**polluter pays**” principle, which has been promoted for half a century (by the OECD and many other institutions and governments) as a way to shift the financial burden of pollution from the taxpayer to the economic agents benefiting from environmentally impactful activities, and to create incentives towards better ecodesign or procurement choices.

The first EPR schemes appeared in the very beginning of the 1990s in Germany and France<sup>24</sup>, for packaging waste. From then, in the large majority of cases, EPR has been applied through **Producers Responsibility Organisations (PROs)**. PROs are in charge of collecting the fees from the producers and redistributing this money to the local authorities in charge of waste management, or using it to pay directly for waste management costs.

### What are their results?

So far, existing EPR schemes have had mixed results:

- **From a financial point of view**, existing EPR schemes do provide actual funding for waste management. Nevertheless, not all end-of-life costs are yet fully covered by EPR schemes, especially for plastic: for example, the cost of microplastics pollution is not taken into account. What is even more problematic is that current EPR does not cover environmental impacts throughout the entire lifecycle of products or packaging. Neither do they include social, human or health costs.
- **From an environmental point of view**, EPR has contributed, together with other waste management regulations, to improve waste collection and sorting, and in some cases, recycling. But existing EPR schemes remain mostly inefficient in terms of waste prevention<sup>25</sup>, or general reduction of the use of plastic; the incentives are not strong enough to actually influence the design choices made by the producers<sup>26</sup>, and EPR does not tackle the central question of the quantity of (single-use) plastic products put on the market.

Therefore, when discussing the setting up of an EPR scheme, citizens and governments should pay attention to the following points.

### Ownership & governance

EPR does not necessarily imply a self-governed system, operated by PROs that are owned by producers. Taiwan's case is interesting : after a few years running EPR through PROs, another system was implemented in 1998, involving a government-controlled Recycling Management Fund. It has been running since then, with an operating budget of \$300 millions in 2021<sup>27</sup>.

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<sup>24</sup> GAIA (2023). [The Pros and Cons of EPR: Lessons from France](#).

<sup>25</sup> University of Utrecht (2021). [Pathways for Extended Producer Responsibility on the road to a Circular Economy](#).

<sup>26</sup> Recycling Network and the Minderoo Foundation (2023). [Let's Reshape EPR](#).

<sup>27</sup> A recent presentation of Taiwan waste management policies, including the EPR scheme can be found [here](#).

If the PRO option is chosen, stakeholders should be extremely vigilant to a number of parameters and operating rules, to limit the impact of conflicts of interest.

! **Legal framework and roles** : EPR scheme design should be in the hands of a democratic institution (e.g. national parliament), including details about the governance of PROs or ecomodulation criteria. Schemes should be binding and governance should include government actors as well as other stakeholders.

! **Participation of stakeholders** : the participation of stakeholders including waste pickers, recycling and reuse operators, environmental and civil society organizations, and municipalities, in the design and operating phases needs to be guaranteed, with actual decision-making power rather than a merely consultative role.

! **Transparency and access to data** : without a complete access to data, participation of stakeholders can not be effective ; transparency will be enhanced if producers' disclosures are made to a public or independent body.

! **Controls and penalties** : dedicated human and material resources are needed to ensure that prevention, collection, and recycling targets are met, and that the legal framework is complied with - including governance rules. Control costs can be covered by EPR fees.

## Waste prevention

Given the overall disappointing record of existing EPR schemes in terms of waste reduction, specific measures should be considered, from early on in the design phase of EPR schemes:

✔ **Introduce binding waste prevention regulation**, as a prerequisite for the introduction of EPR schemes

✔ **Design a strong eco-modulation scheme** by paying extra attention both to the definition of the criteria (they should be selected to have a *real* impact on prevention) and to the incentivizing power of the modulated fees (are the primes or penalty high enough to guide producer's choices?).

✔ **Extend the cost coverage of EPR scheme** as far as possible to upstream costs, in addition to all end-of-life costs, prevention and reuse costs.

## Inclusion of reuse and recycling players

The livelihoods of existing informal and formal workers in the waste sector, and especially waste pickers, are likely to be challenged by the introduction of an EPR scheme, as new collection rules and competitors come into play. In addition to including these stakeholders in EPR scheme governance, key measures can be taken to guarantee their access to resources and to funding, such as creating a dedicated fund for reuse and repair activities or enabling tailored contracts for independent workers or VSE/SMEs.

## 6. Plastic offsetting, credits and neutrality: False claims and polluting practices

As companies come under increasing pressure to reduce plastic, some are using plastic offsetting schemes to claim plastic “neutrality” as if they were not contributing to plastic pollution. These schemes include often polluting plastic waste-management or clean-up activities, on the basis of which other companies issue tradable plastic “credits”. This chapter considers why the **plastics treaty must neither include nor legitimize plastic offsets, credits and neutrality**.

### What are plastic offsetting, credits and neutrality?

Plastic **offsetting** is the overall process by which an entity producing or using plastics buys plastic **credits** (also sometimes called offsets) to claim plastic **neutrality**. The offsetting process involves the following steps:

- One tonne of existing plastic waste is collected and/or processed somewhere in the world
- A company (e.g. Verra) verifies this act according to its standards and declares it to constitute a plastic **credit**
- Plastic credits are sold on a financial marketplace (e.g. Plastic Credits Exchange) or by private companies to individuals or companies who use plastics in their operations (e.g. a cosmetics company that uses single-use plastic packaging). A fraction of the money goes to those who did the original collecting and processing, the rest is split between the company (e.g. Verra) and the marketplace (e.g. Plastic Credit Exchange) or private trading company.<sup>28</sup>
- When an individual or company buys plastic credits corresponding to the quantity of plastics they use in their operations for a set period of time, they claim plastic **“neutrality”** over that period.<sup>29</sup>

### Faulty assumptions and false reduction

Plastic offsetting is based on two key and often false assumptions:

**1. That the plastic waste collection and/or processing activities would not have happened without the money from the credit.** This is also called additionality: the effect of the credit must be additional to what would normally happen. However, plastic credit activities occur in countries with operational waste collection and management, whether formal or informal. In addition, logic provides that credits cannot be attributed to past activities that already happened without credits - however, Verra has attributed credits for past activities that

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<sup>28</sup> BFFP (2023) [Smoke and Mirrors: The Realities of Plastic Credits and Offsetting](#).

<sup>29</sup> Ibid.

took place before the credit system and financing existed.<sup>30</sup> In this respect, plastic credits don't comply with minimum requirements for additionality under the UN's carbon market, the Clean Development Mechanism.<sup>31</sup>

**2. That collecting and processing plastic waste cancels out the environmental impact of producing and using plastics.** This assumption is the basis for "neutrality" claims. It is particularly puzzling given that most harm to health and the environment from plastics occurs in the production phase, and not during the waste or end-of-life phase.<sup>32</sup> While adequate waste management matters, it does not undo or cancel out harm that occurs upstream. Recycling doesn't cancel out plastic production, nor does reuse (see [Chapter 9: The Plastics Circularity Trap, page 33](#)). In addition, different plastic polymers, materials and products have different impacts on health and the environment across their life cycles, so the notion that they are all interchangeable in terms of impacts is simply wrong. This faulty assumption is used to make myriad false claims that plastic credits "solve plastic pollution".<sup>33</sup> The only thing that can offset increased plastic production and use is decreased plastic production and use - something that plastic offsetting schemes do not achieve. In fact, offsetting has been observed to create perverse incentives against reduction in the case of greenhouse gasses.<sup>34</sup>

## Pollution, environmental injustice and waste colonialism

As explained above, plastic offsetting only considers downstream pollution impacts, ignoring the largest share of pollution that occurs upstream. In addition, it does not even seek to reduce downstream plastic pollution, but only to increase credited activities - as if current downstream pollution rates as well as existing (legacy) pollution were in any way sustainable.<sup>35</sup> This approach flies in the face of scientific evidence that shows that plastics undermine all planetary boundaries.<sup>36</sup> This is why plastics as a material, as well as associated pollution across their life cycle, must be significantly reduced.

In addition, credited activities cause significant pollution and harm to human health, especially **plastic burning**, that releases heavy metals (mercury, lead, and cadmium), persistent organic pollutants (dioxins and furans), acid gasses (sulfur dioxide and hydrogen chloride), particulates matter and carbon emissions. 86% of plastic credit activities listed on the Plastic Credits Exchange involve burning plastic waste in incinerators or cement kilns.<sup>37</sup> Also, credit payments can even increase pollution: paying cement kilns credits for burning plastic waste could boost the carbon and toxics-intensive cement industry.<sup>38</sup>

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<sup>30</sup> Ibid.

<sup>31</sup> Ibid.

<sup>32</sup> Azulay, D., Villa, P., Arellano, Y. Gordon, M., Moon, D. & Miller, K. et al. (2019). Plastic & Pollution: The Hidden Costs of a Plastic Planet. Center for International Environmental Law. <https://www.ciel.org/plasticandhealth/>; Hamilton, L., Feit, S. Muffett, C., Kelso, M., Rubright, S. & Bernhardt, C. et al. (2019). Plastic & Climate: The Hidden Costs of a Plastic Planet. Center for International Environmental Law. <https://www.ciel.org/plasticandclimate/>

<sup>33</sup> BFFP (2023) [Smoke and Mirrors: The Realities of Plastic Credits and Offsetting](#).

<sup>34</sup> Schneider, L., & Kollmuss, A. (2015). [Perverse effects of carbon markets on HFC-23 and SF6 abatement projects in Russia](#). *Nature Climate Change*, 5(12), 1061-1063.

<sup>35</sup> GAIA (2022). [Plastic neutrality and credit](#).

<sup>36</sup> Villarrubia-Gómez, P., Almroth, B. C., Ryberg, M. W., Eriksen, M., & Cornell, S. (2022). [Plastics Pollution and the Planetary Boundaries framework](#) (SSRN Scholarly Paper 4254033).

<sup>37</sup> BFFP (2023) [Smoke and Mirrors: The Realities of Plastic Credits and Offsetting](#).

<sup>38</sup> Ibid.

Finally, plastic offsetting does not only perpetuate plastic pollution: it does it in a way that **deepens environmental injustice and waste colonialism**. It allows credit buyers in developed countries to exploit cheap labor costs and weak environmental and worker regulations in developing countries to claim “neutrality” and greenwash their continued plastic production, use and pollution. The risk of toxic recycling is high for recycling activities in countries with weak environmental and worker regulations, and given the continuing lack of transparency on the full chemical composition of plastic wastes. Meanwhile, continued plastic overproduction and consumption feeds global plastic waste trade flows from developed to developing countries where waste workers and communities bear the toxic burden from plastic waste they are not responsible for.<sup>39</sup>

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<sup>39</sup> GAIA (2022). [Plastic neutrality and credit](#).

## 7. Just transition

### What is just transition?

The concept of just transition has been around since the 1980s when US trade union movements adopted it to protect workers affected by new water and air pollution regulations. Nowadays, to address the triple planetary crisis, governments and businesses must shift towards more environmentally-friendly, resilient, and low-carbon economic models. In this sense, *just transition* means shifting in that direction in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind.

### The importance of just transition in the global plastics treaty

Resolution 5/14 to end plastic pollution adopted at UNEA 5 in March 2022 recognizes the significant contribution to plastic pollution reduction made by workers in informal and cooperative settings, such as waste pickers. However, in order to adequately safeguard the livelihoods of impacted and potentially impacted workers and communities, the concept of just transition must be well defined in the treaty so it can be well understood by all parties.

The International Alliance of Waste Pickers defines just transition in the context of the global plastics treaty as: *“ending plastic pollution in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind. It is based on making visible those already working at all stages of the plastic value chain, including waste pickers and other workers in informal and cooperative settings and recognizing their fundamental human dignity and their historic contribution.”*<sup>40</sup>

Furthermore, a just transition involves maximizing the social and economic opportunities, while minimizing and carefully managing any challenges – including through effective social dialogue among all groups impacted.<sup>41</sup> Therefore, it is important that the plastics treaty ensures the inclusion of Indigenous Peoples, informal workers, current and future affected communities and stakeholders, and promotes their effective participation in the process of shaping a just transition.

### Key stakeholders in the just transition conversation

There are various groups for whom just transition is important such as labor movements, workers unions, workers in informal and cooperative settings, waste workers, waste pickers, environmental justice communities, and Indigenous Peoples, among others. At GAIA we work hand in hand with two of the most vulnerable groups that have been directly impacted by plastic pollution:

#### Waste Pickers

- Waste pickers play a critical role in addressing the challenges of plastic pollution, climate change and poverty. They manage approximately 60% of the world's plastic waste collected for recycling. Their work

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<sup>40</sup> International Alliance of Waste Pickers (2023). [IAWP's Vision for a Just Transition for Waste Pickers under the UN Plastics Treaty](#).

<sup>41</sup> GAIA (2023). [Environmental Justice Principles for Fast Action on Waste and Methane](#).



to support recycling delays the harm associated with the burning or landfilling of plastic waste at end of life, including carbon emissions, as well as associated harm to health.

- Waste pickers' work saves costs for municipalities by filling in gaps in waste management and extending the lifespan of dumpsites and other waste-processing infrastructure.
- Despite their significant social, economic and environmental contributions, waste pickers constitute the most vulnerable and exploited stakeholders within the plastics value chain as most of them operate as self-employed informal workers without labor rights or social protection.
- The global plastics treaty represents an opportunity for them to ensure that their livelihoods improve and that their historical contribution to plastic pollution mitigation through their waste management services are recognized.

### **Indigenous Peoples**

- Indigenous Peoples are inheritors and practitioners of unique cultures and ways of relating to people and the environment.
- Indigenous Peoples have sought recognition of their identities, way of life and their right to traditional lands, territories and natural resources for years, yet throughout history, their rights have always been violated.
- Indigenous Peoples have been affected throughout the plastics value chain. At the fossil fuel extraction stage to source feedstocks for plastics, Indigenous territories face the burdens of extractive industries. At the production stage, Indigenous communities located near petrochemical facilities face significant toxics exposures. In terms of consumption, economically-disadvantaged Indigenous communities often have few choices other than plastic products. During final disposal, Indigenous communities are also harmed by plastics since dumpsites, landfills and incineration plants are often placed in their communities or nearby.<sup>42</sup>

### **Opportunities for systemic change**

Just transition provides opportunities to promote systemic change in a way where those that have been most affected by plastic pollution do not have to face the same injustices again. It also ensures that no harm is done to other communities or groups.

The provisions on just transition are key to establishing the pathway to promote the implementation of reuse and repair systems, involving the key stakeholders in the design and implementation of these at the national and local levels.

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<sup>42</sup> Learn more: Sacred Earth Solar and Indigenous Climate Action (2023). [Just Transition Guide for Indigenous Communities](#).

## 8. Switching materials or systems?

Many proposed substitutes for plastic products are single-use products made from non-plastic materials. Is merely switching materials within a production and consumption paradigm dominated by single-use and its take-make-waste linearity enough to meet the global treaty's objective to protect human health and the environment? Evidence detailed below shows that it is not. **Fortunately, a better solution already exists: unlike single-use products, reuse systems are compatible with sustainable material production levels that respect our planet's boundaries.**

### Biodegradable, compostable and biobased plastics are harmful

The revised zero draft describes biobased, biodegradable, compostable plastics (e.g. PLA, PHA, PHB) as **"alternative plastics"**. This term introduces unhelpful confusion as to their nature as plastics, and a deceptive sense that they are always better for the environment than conventional plastics. In fact, there is mounting evidence that these plastics may cause multiple harms, from deforestation, increased use of agrochemicals, and food insecurity (biobased plastics)<sup>43</sup> to disruption of soil health (biodegradable and compostable plastics)<sup>44</sup> to microplastic emissions.<sup>45</sup>

### The challenge with all single-use products, including non-plastic substitutes

The arguments advanced in favor of single-use substitutes to plastics usually focus so far has often been on their end-of-life behavior, with a preference to materials that are more effectively recycled (e.g. aluminum, glass or paper) or that biodegrade under certain conditions (e.g. bagasse).

However, as shown in [Chapter 9: The Plastics Circularity Trap](#), circularity is not always good for the environment - it considers material intensity but neglects many environmental impacts from energy, water and land use, to toxics and biodiversity. Circularity, as well as composting and biodegradation, do not prevent overproduction and its harms, while all forms of waste processing imply some level of harm to the environment and health.

**Single-use glass** requires the mining of silica, harming rivers and coasts as well as biodiversity that depends on those habitats. The production process also produces silica dust that pollutes water sources and triggers lung disease. Glass recycling can happen in closed loop, significantly reducing the harms from the sourcing of primary

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<sup>43</sup> Gerassimidou, S., Martin, O. V., Chapman, S. P., Hahladakis, J. N., & Iacovidou, E. (2021). [Development of an integrated sustainability matrix to depict challenges and trade-offs of introducing bio-based plastics in the food packaging value chain](#). *Journal of Cleaner Production*, 286, 125378.

<sup>44</sup> Accinelli, C., Abbas, H. K., Bruno, V., Nissen, L., Vicari, A., Bellaloui, N., Little, N. S., & Thomas Shier, W. (2020). [Persistence in soil of microplastic films from ultra-thin compostable plastic bags and implications on soil \*Aspergillus flavus\* population](#). *Waste Management*, 113, 312–318.

<sup>45</sup> Stapleton, M. J., Ansari, A. J., Ahmed, A., & Hai, F. I. (2023). [Evaluating the generation of microplastics from an unlikely source: The unintentional consequence of the current plastic recycling process](#). *Science of The Total Environment*, 902, 166090.

silica from the environment. However, it is still very **energy-intensive, requiring 75% of the energy needed to make primary glass**. Even with plans to decarbonize glass production and recycling processes, the energy inputs required would still take the current single-use glass economy 170% over its carbon budget to remain at 1.5 degrees of global warming by 2050 in the EU alone. However, glass is highly suitable for reuse, which would also avoid issues related to overproduction and reduce the volume of recycling.<sup>46</sup>

**Single-use aluminum** production needs the mining and refining of bauxite that harm vast areas of land within or near tropical rainforests, causing deforestation, toxic pollution and biodiversity loss, as well as expropriation of Indigenous lands and violations of the rights of Indigenous peoples. Primary aluminum is also one of the most carbon-intensive metals to produce.<sup>47</sup> Although recycled aluminum performs much better, aluminum recycling has its limits: it still **requires primary material inputs at every cycle** in key applications such as beverage cans. This is because cans are currently designed with two different types of alloys in the ends (stronger) and in the body (weaker) of the can. These get mixed during recycling, producing a material that is not strong enough, and requires the addition of primary aluminum to manufacture cans.<sup>48</sup>

**Single-use paper-based and cardboard** require the production and extraction of wood pulp, generating deforestation, harm to forest biodiversity, increased susceptibility to fires, increased use of agrotoxics, dispossession of land belonging to Indigenous and traditional communities, among other harms from plantation forestry.<sup>49</sup> The pulp and paper industry is also the world's third largest consumer of water.<sup>50</sup>

Plastic or other chemical coatings are widely used to waterproof paper and cardboard for their use as food packaging or other food-contact applications. Many food-contact single-use paper-based and cardboard products **have up to 20% of plastics, and therefore are actually plastic products**. The definition of plastic products under the treaty should include products made partly from plastic materials, which is the case for the many plastic-coated paper and cardboard products that are often wrongly presented as alternatives to single-use plastics.

In addition, paper-based and cardboard substitutes have a **low recycling potential**. As multi-material products, they are inherently challenging to recycle because separating the materials is difficult and expensive. They are therefore more likely to end up burned in incinerators or landfilled. Their recycling also **requires virgin material input at every cycle**. Even when the paper or cardboard fraction is separated - through a process and equipment that are usually too costly to make economic sense - virgin wood pulp must always be added at a 50% ratio, to compensate for the weakness of recycled paper and cardboard fibers. The other material fractions (e.g. plastic or aluminum) are not recyclable and usually end up burnt or landfilled.

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<sup>46</sup> Eunomia (2023). [Decarbonisation of Single Use Beverage Packaging: Investigating 1.5oC aligned carbon budgets for aluminum, PET and glass beverage containers in the EU](#), report commissioned by Zero Waste Europe, p. 18 & 20.

<sup>47</sup> Georgitzikis, K., Mancini, L., d'Elia, E., Vidal-Legaz, B. (2021). [Sustainability aspects of Bauxite and Aluminium – Climate change, Environmental, Socio-Economic and Circular Economy considerations](#), EUR 30760 EN, Publications Office of the European Union.

<sup>48</sup> Karpe E., Thellenberg P., Fernström F. (2022) [Circularity of aluminium: Mapping difficulties in scrap circulation](#).

<sup>49</sup> Stravens, M. (2023). [Disposable Paper-based Packaging for Food. The false solution to the packaging waste crisis](#).

<sup>50</sup> International Energy Agency (2022). [Pulp and Paper. Tracking Report](#).

Finally, paper-based and cardboard substitutes in food-contact applications are **not compostable**. Inks, adhesives and barrier chemicals (e.g. toxic PFAS waxes) prevent the safe composting of food-contact paper and cardboard-based materials, as well as their use in anaerobic digesters.<sup>51</sup>

## Caution with LCA limitations

**Life cycle analyses (LCAs) do not adequately capture upstream or pollution impacts**, and are therefore insufficient to assess the environmental and health implications of switching from one product material to another. The weakness of LCAs in capturing plastic pollution across its lifecycle has already been established.<sup>52</sup> This also applies to paper-based and cardboard substitutes, where forestry as well as littering impacts from single-use paper and cardboard-based food packaging are often absent from life cycle analyses due to their incomplete scope.<sup>53</sup> Assessments of impacts on all planetary boundaries as well as human health are needed to adequately capture tradeoffs.

## Best overall: eliminate, reuse & refill

The optimal scenario from an environmental standpoint is when a plastic product can be **eliminated without need for substitution**, such as plastic straws in most contexts, and plastic packaging for individual fruits or vegetables, particularly in shorter supply chains.

When a product (including a form of packaging) is needed, reuse is better than single-use across all materials, as long as the number of cycles surpasses the sustainability break-even point (number of cycles where reuse becomes environmentally beneficial). This can be done through reuse systems (where the customer rents the reusable item) or refill (where the customer brings their own reusable container for refill). The plastics treaty must support reuse in a material-agnostic manner, rather than confine reuse to plastics: choice of material must be guided by what is best for health and environmental for a given application.<sup>54</sup>

For some applications in some contexts, reuse or refill may be challenging to deploy (e.g. water scarcity making washing challenging, or transportation infrastructure weaknesses interfering with reuse logistics), and for these, single-use substitutes could become necessary. However, these cases should be the exception, and not the rule.

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<sup>51</sup> Zero Waste Europe (2024). [Factsheet: What's inside food-contact paper packaging? Plastic](#) and M. & Mme Recyclage (2024) [Functionalisation Of Paper And Cardboard Report](#).

<sup>52</sup> Eunomia (2020) [Plastics: Can Life Cycle Assessment Rise to the Challenge?](#)

<sup>53</sup> Zero Waste Europe (2024). [Factsheet: What's inside food-contact paper packaging? Plastic](#) and M. & Mme Recyclage (2024) [Functionalisation Of Paper And Cardboard Report](#).

<sup>54</sup> Global Plastics Policy Centre (2023). [Making Reuse a Reality: A systems approach to tackling single-use plastic pollution](#).

## 9. The plastics circularity trap

References to the “circular economy of plastics” and “plastics circularity” have multiplied around the plastic treaty negotiations. This chapter considers the following questions:

- Is circularity the same as recycling?
- Is circularity always good for the environment?
- What are the challenges with plastic recycling, and what future does it have?

For a longer discussion of circularity and plastics, see GAIA 2022, [Plastics circularity: beyond the hype](#).

### Circularity is reduction, repair, reuse and real recycling

We have long been cycling material resources in our economies through **repair, reuse** and **recycling**. These old practices were rebranded as “circular economy” by the [Ellen MacArthur Foundation and consulting firm McKinsey](#) a decade ago.<sup>55</sup> It [excludes processes that destroy materials](#), such as toxic and chemical recycling, and all forms of burning plastic waste (open burn, (co)incineration, plastic-to-fuel).<sup>56</sup>

Despite the historical contributions made by waste pickers worldwide to collect, sort, transport, and sell recyclable and reusable materials and products in an informal and semi-formal capacity, recycling as itself will not offer a solution to the plastic pollution crisis we are facing.

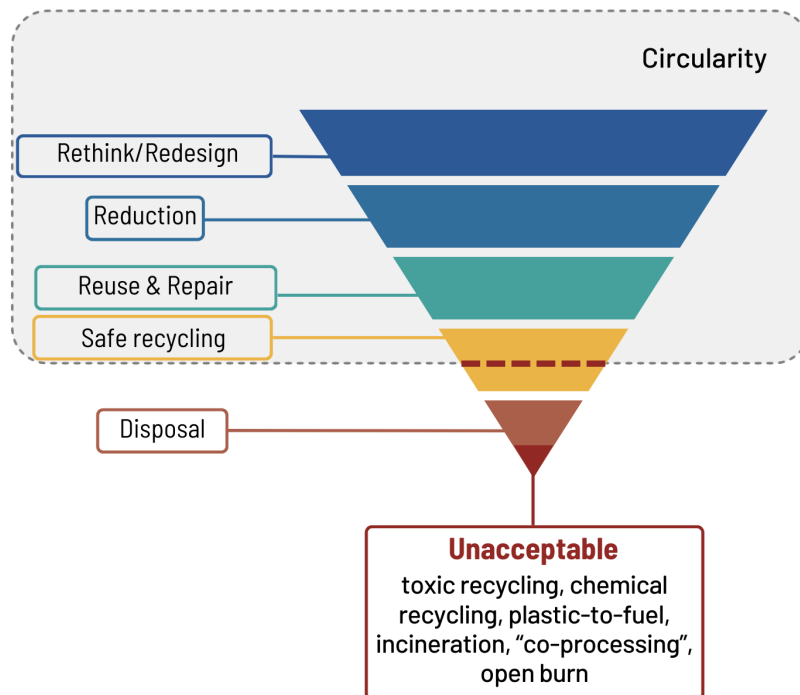
Many policies focus only on recycling, when **recycling is actually a less effective way to conserve materials and achieve circularity compared to reduction, reuse and repair**. This is because recycling has higher costs for the environment and wastes more material than reuse and repair, and of course, than reduction. Also, lack of chemicals transparency allows toxic recycling that creates recyclates that cannot be safely used - toxic recycling is neither true recycling nor circular.

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<sup>55</sup> Ellen MacArthur Foundation (2013). [Towards the Circular Economy](#).

<sup>56</sup> CIEL (2023). [Beyond Recycling: Reckoning with Plastics in a Circular Economy](#).

## ZERO WASTE HIERARCHY



### Circularity only helps the environment if and when it displaces new production

The collection and recycling of plastics cause carbon, toxic and microplastic emissions, as well as energy, water, material and land use. Those pressures on the environment [can only be redeemed when recycling directly avoids primary \(new, "virgin"\) plastic material production](#) - and not when it feeds into a pattern of growing production of plastics.<sup>57</sup> To date, **plastic recycling has not meaningfully displaced primary plastic production**. In fact, **the plastics industry is using recycling to greenwash exponential plastic production**.

As long as government subsidies make primary plastic plentiful and artificially cheap, as long as product material and design decisions make plastic recycling impossible or too expensive in practice, and as long as the safety of plastic recyclates is not guaranteed, plastic recycling will not displace primary production.

Recycling has long been the main metric used as a proxy for the circular economy - but this misses the mark, since recycling is a less effective form of circularity compared to reuse and repair. As leading industrial ecology expert [Roland Geyer advocates](#), **we must make annual primary production the main metric for the circular economy**.<sup>58</sup>

**The best strategy to reduce overall primary material production is reduction, followed by reuse and repair.** Mere substitution of single-use fossil-based plastics to single-use bio-based plastics, or single-use products made from other materials will not close the circle.

<sup>57</sup> Zink, T. & Geyer, R. (2018). [Material Recycling and the Myth of Landfill Diversion](#), *Journal of Industrial Ecology*, Vol. 23 Issue 3.

<sup>58</sup> Geyer, R. (2019). [The Business of Less: The Role of Companies and Households on a Planet in Peril](#).

Circularity is not intrinsically good for our planet nor something we should aspire to at any cost. Indeed, the circular economy paradigm only considers material use. It does not address energy use, water use, land use and the integrity of planetary boundaries, and as such, it cannot capture the lifecycle impacts of plastics. In contrast, [sufficiency](#) is “a set of policy measures and daily practices which avoid the demand for energy, materials, land, water, and other natural resources, while delivering wellbeing for all within planetary boundaries”.<sup>59</sup> **Ensuring just levels for planetary boundaries is an overarching systemic principle that the plastics treaty must enshrine.**

## Plastic recycling challenges and possible future

**Recycling plastic waste delays its disposal, but does not reduce or prevent it.** It brings real short-term benefits by lessening immediate harms associated with disposal, particularly toxic and carbon emissions from open burning or incineration.

However, the loop of recycling is only “closed” when a product with recycled content can be recycled into the same kind of product once it becomes waste – in other words, when the recycled content can do several loops at the same level of value in the economy.

Even PET bottle recycling, the poster child of plastic recycling, does not close the loop: PET bottles are mostly recycled either into polyester fiber (with greater microplastic shedding potential) or PET thermoform packaging (trays, clamshells or blister packs). Neither polyester fiber nor PET thermoforms are recycled in any meaningful way. In addition, even in PET recycling processes, a significant amount of material is lost and replaced with primary plastics. As of 2020, [only 10% of plastics ever produced](#) had been recycled.<sup>60</sup> **True closed-loop, “circular” plastic recycling is still largely a fiction and therefore cannot be understood as circularity.**

Recycling also adds a layer of uncertainty to the presence of toxic chemicals in plastics, and their implications for human health. [Over 13,000 chemicals](#) are associated with plastics, and most have not been tested for safety, while chemicals transparency is lacking.<sup>61</sup> Recycling increases the potential for mixing and dissemination of chemicals in plastics. This makes it **hard to find applications for recycled plastic that are both safe and high enough in volume to meaningfully displace primary production**, hence the debate around recycled content requirements in food-contact materials. **Without chemicals transparency and bans on chemicals including polymers of concern, safe circularity is impossible.**

The truth is, plastic recycling comes at a cost – and the sustainable future of recycling may lie not in the mass-scale recycling of single-use plastics, but instead in the **targeted high-quality recycling of essential plastics**, for instance durable essential plastics in electric vehicles, renewable energy infrastructure and other areas of the climate transition.

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<sup>59</sup> Saheb, Y. (2021). [COP26: Sufficiency Should be First](#); See also Chassagne, N. (2019). [Sustaining the ‘Good Life’: Buen Vivir as an alternative to sustainable development](#). *Community Development Journal* (pp. 482–500).

<sup>60</sup> Geyer, R. (2020). [Chapter 2—Production, use, and fate of synthetic polymers](#). In T. M. Letcher (Ed.), *Plastic Waste and Recycling* (pp. 13–32).

<sup>61</sup> UNEP (2023). [Chemicals in plastics: a technical report](#).



## 10. The plastics treaty and the Basel Convention

Plastic wastes as well as their trade and management threaten workers, communities, ecosystems and planetary boundaries, particularly in Global South countries. The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention) addresses some of these threats but also leaves many gaps. This chapter identifies which of these gaps are best addressed under the global plastics treaty – and which are best left for the Basel Convention, to avoid duplication. For more detail, please see the October 2023 briefing [Bridging the Basel Convention Gaps with the Future Plastics Treaty](#) by BAN, EIA and GAIA.

### A treaty focused on binding upstream measures to complement Basel gaps

The Basel Convention has several provisions on waste generation and minimization: it requires Parties to minimize the generation of hazardous and other wastes (Article 4.2(b)), and its 2011 Cartagena Declaration is dedicated to waste prevention and minimization. Prevention is also the guiding principle of its 2013 Framework for the environmentally sound management of hazardous wastes and other wastes (ESM Framework), which calls for “resources and tools be allocated in accordance with the [waste] Hierarchy”. The Convention also adopted guidance on waste prevention and minimisation in 2017, while its 2023 Technical guidelines on the ESM of plastic wastes (Plastic Waste Guidelines) feature a section on waste prevention and minimisation. However, **Basel provisions on waste prevention are all voluntary guidance that has failed to curb the plastic pollution crisis**, and the emphasis remains on recycling rather than upstream prevention. **Prevention must be obligatory and binding for plastics, and must be the primary task for the new plastics treaty.**

### Treaty regulations on harmful, polluting plastic waste management needed

All forms of plastic waste management harm the environment, health and human rights. Plastic burning, whether during open burn or controlled burning in incinerators, cement kilns, or pyrolysis, and even in state-of-the-art facilities,<sup>62</sup> generates significant toxic and carbon emissions as well as hazardous ashes laden with microplastics.<sup>63</sup> US EPA scientists have found some chemicals emitted by chemical recycling to be so dangerous that they expect all people exposed to them over a lifetime to develop cancer.<sup>64</sup> **None of these harms are adequately addressed in Basel guidance, and neither does it equip governments to tell apart harmful waste-management technologies from safe ones.**

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<sup>62</sup> Zero Waste Europe & Toxico Watch (2018). [Hidden emissions: A story from the Netherlands](#).

<sup>63</sup> Yang, Z., et al. (2021). [Is incineration the terminator of plastics and microplastics?](#) *Journal of Hazardous Materials*, Vol. 401, 123429; Shen, M., et al. (2021). [Can incineration completely eliminate plastic wastes? An investigation of microplastics and heavy metals in the bottom ash and fly ash from an incineration plant](#). *Science of the Total Environment*, 779, 146528.

<sup>64</sup> Lerner, S. (2023). [EPA Approved a Fuel Ingredient Even Though It Could Cause Cancer in Virtually Every Person Exposed Over a Lifetime](#), *Pro Publica*.

Mechanical recycling can also circulate toxics and generate significant microplastics.<sup>65</sup> The Basel Convention's 2019 Plastic Waste Amendments require that plastic waste only be traded without controls when "destined for recycling in an environmentally sound manner," among other conditions (Annex IX listing B3011). However, the Convention's texts including the 2023 Plastic Waste Guidelines fail to identify and distinguish between ESM and non-ESM recycling.

The new plastics treaty will have a focus on plastics associated pollution, which the Basel Convention lacks. **The new plastics treaty will therefore be the best avenue to establish binding criteria for what might be redefined as truly environmentally and socially-sound management of plastic wastes** that upholds environmental justice and human rights and protects planetary boundaries.

## Treaty consideration of hazardous polymers and additives

The BRS Conventions Secretariat participated in a thorough UNEP 2023 publication on chemicals of concern in plastics, [Chemicals in Plastics: A Technical Report](#). Yet, the Basel Convention continues to struggle to adequately address and regulate chemicals of concern in plastic wastes, either as polymers or additives. The 2023 Plastic Waste Guidelines leave Parties unequipped to clearly identify what plastic wastes are hazardous due to the presence of hazardous additives or polymers. It also fails to uphold the rebuttable presumption framework, where Parties should treat plastic wastes as hazardous unless the absence of hazardous polymers or additives is demonstrated. **The plastics treaty must establish transparency and accurate labeling of chemical constituents, as well as prohibitions on chemicals and polymers of concern, to end the international circulation of toxic plastic waste, and the amplification of toxics through recycling.**

## Basel must address gaps on the trade of plastic wastes in other waste streams

Many types of plastic waste that should be controlled under the Basel Convention Plastic Waste Amendments continue to cross borders unchecked through the use of obsolete Annex IX listings that the Convention has failed to reform. These include synthetic textiles, rubber wastes, refuse-derived fuel, plastics in e-waste, plastics in cars, and plastics mixed in paper bales. Those wastes cause manifold harms in importing countries, including microplastic and toxic pollution through emissions and burning.<sup>66</sup> **The Basel Convention must update its listings on waste streams containing plastics and shift them to Annex II (waste deserving special consideration) if not Annex VIII (hazardous), while the plastics treaty should prohibit all thermal treatment of plastic waste.**

## Better enforcement needed

Currently, the Plastic Waste Amendments are rarely enforced when it comes to hazardous plastic wastes (listing A3210). Meanwhile, many plastic wastes are traded without controls because they are presumed to be made from a single, non-halogenated polymer, free from contamination and destined for environmentally-sound recycling (listing B3011), although their contamination and toxics content bars any such safe recycling in practice. **The Basel Convention must strengthen its governance and implementation mechanisms and reaffirm the rebuttable**

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<sup>65</sup> Brown, E., et al. (2023). [The potential for a plastic recycling facility to release microplastic pollution and possible filtration remediation effectiveness](#). *Journal of Hazardous Materials Advances*, Vol. 10.

<sup>66</sup> Nexus3, Arnika, ECOTON & IPEN (2019). [Plastic Waste Flooding Indonesia Leads to Toxic Chemical Contamination of the Food Chain](#).

presumption framework, where Parties should treat plastic wastes as hazardous, unless the absence of hazardous polymers (e.g. PVC), hazardous additives (e.g. brominated flame-retardants) and contaminants, as well as the safety of recycling destinations, is demonstrated. The Convention must also strengthen its governance and implementation capacity to end the multiple abuses of Article 11 of the Convention for trade with non-Parties (US-Canada arrangement, Mexico-US trade invoking the OECD Decision), and other trade ignoring Basel controls (intra-EU trade).

Ultimately, a plastics treaty focused on binding upstream measures while establishing binding criteria for truly safe plastic waste management, and a Basel Convention with stronger governance and implementation powers and freed from obsolete listings that interfere with the Plastic Waste Amendments, will be the best combination to address the harms of plastics and plastic pollution across the whole lifecycle.

## 11. “Is there anything there?” Nuclear-assisted chemical recycling

In the Niels Bohr atomic model, a tiny nucleus is surrounded by a great expanse of emptiness. Matter, it seems, is largely composed of nothing. The vast vacant outer region is the realm of electrons which, quantum mechanics tells us, are simultaneously waves and particles, and can be everywhere at the same time. **Such a model – a grain of an idea surrounded by something vague and intangible – is analogous to the status of nuclear-assisted chemical recycling.**

At the global plastics treaty INC-3 in Nairobi, the International Atomic Energy Agency (IAEA) was handing round a document that promoted the role of irradiation in recycling plastics.<sup>67</sup> It is one of a few publications created by the IAEA following the launch of an initiative called NUTEC (NUclear TEchnology for Controlling plastic pollution) in 2021. More detail is provided in an academic paper supported by the IAEA, published the following year.<sup>68</sup>

Through the IAEA initiative, the role of nuclear technology covers: strengthening plastics to reduce the need for some additives, downcycling, tracking pollution, and improving sorting methods for plastic waste. It also includes a proposal for chemical recycling which is more ambitious.

The IAEA describe the failings of chemical recycling: high energy demand and the release of toxic additives and contaminants, while the journal paper shows an awareness of the shortcomings of pyrolysis (the predominant chemical recycling method): low yield due to re-formation of unwanted substances, difficulty in managing the sensitive process, low efficiency, and high temperature requirements. But the **interventions offered by the nuclear industry are still unproven** and leave many questions unanswered. As quoted, NUTEC is about “addressing innovation.”<sup>69</sup>

Currently, no nuclear-assisted chemical recycling plant exists. It is not believed that any are planned, nor have there been any pilot-scale trials. Even laboratory research over twenty years ago was described as “limited” and “not widespread.”<sup>70</sup> Without any further progress, the topic was resurrected by the IAEA, first in 2018, then again in 2021 with still no notable supporting research. What then does it offer?

In summary, **the idea is to irradiate plastic waste combined with pyrolysis.** This would involve the use of either gamma rays or electron beams to transfer energy into the plastic polymers. How the gamma rays are to be produced is not mentioned, how safe this would be and how practically this could be integrated with pyrolysis is equally uncertain.

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<sup>67</sup> IAEA (2022). [Summary Report. NUTEC Plastics. A nuclear solution to plastic pollution. Roundtable for the Africa Region.](#)

<sup>68</sup> Ponomarev (2022). [Keystone and stumbling blocks in the use of ionizing radiation for recycling plastics](#), *Radiation Physics and Chemistry*, 201, 110397.

<sup>69</sup> Ibid.

<sup>70</sup> Burillo, G., Clough, R.L., Czikovsky, T., Guven, O., Le Moel, A., Liu, W., Singh, A., Yang, J., Zaharescu, T. (2002). [Polymer recycling: potential application of radiation technology](#), *Radiation Physics and Chemistry*, 64, pp. 41-51.

An electron accelerator is an expensive device, and it causes the plastic to release toxic gasses.<sup>71</sup> The electricity demand is not disclosed, nor is there information on how scalable the process is – larger plastic volumes would need larger equipment. It is also unclear how uniform the application might be per dose.

The big problem is that free radicals form following irradiation and this creates new branched structures, and this is exactly the same issue that thwarts conventional plastic pyrolysis. It results in **highly-toxic waste streams**, tremendously **challenging process management**, **inability to handle mixed wastes**, and a product **unfit for use in plastic production lines without 98% blending with virgin petroleum naphtha**.<sup>72</sup>

In the classical atomic model, nothing is holding the nucleus together. Similarly, **there is nothing holding together the idea of nuclear-assisted chemical recycling**. **Robust supportive research does not exist, pilot plants don't exist, the energy balance would be ridiculously bad, all with the extra challenges and complications of handling radioactive substances.**

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<sup>71</sup> Ponomarev (2022). [Keystone and stumbling blocks in the use of ionizing radiation for recycling plastics](#), *Radiation Physics and Chemistry*, 201, 110397.

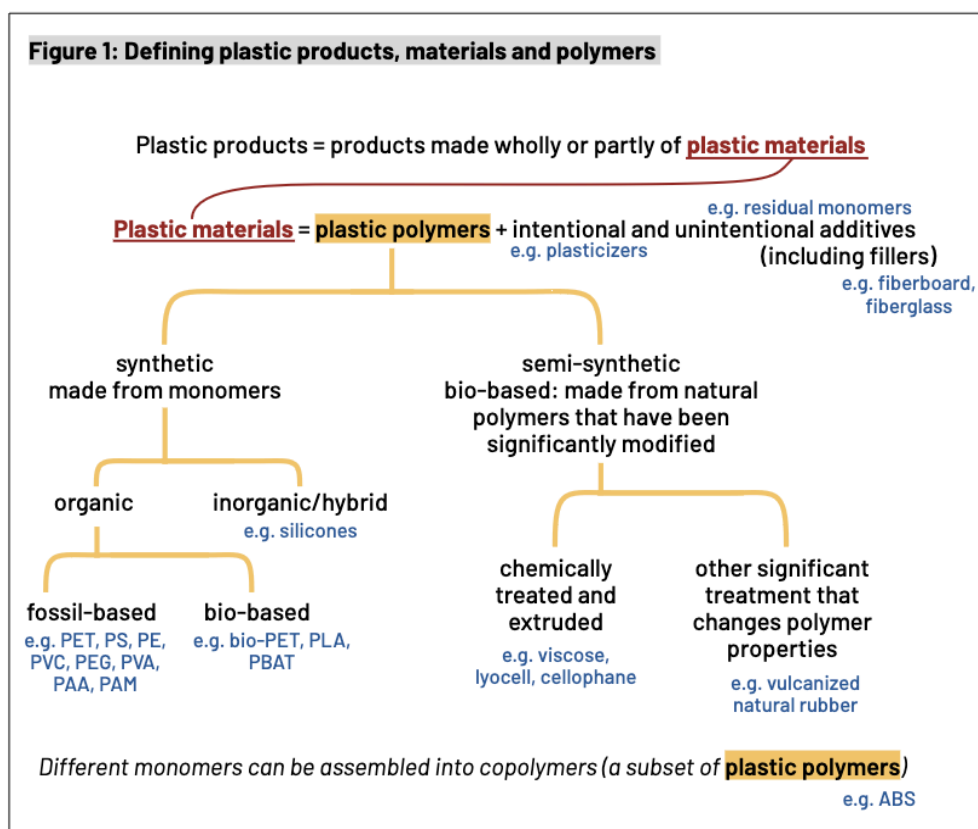
<sup>72</sup> Rollinson, A. (2023). [Leaky Loop "Recycling": A technical correction on the quality of pyrolysis oil made from plastic waste](#). Zero Waste Europe.

## 12. Definitions

A glossary of terms for the plastics treaty could be adopted as an annex during the early COPs, grouping definitions and defining criteria from different control measures and providing clarity for adequate implementation if needed. **The following working definitions may be helpful for negotiators in the context of discussions on related control measures.**

### Plastics and plastic pollution

This diagram from GAIA 2022, [Defining plastic products, materials and polymers: a proposal](#) illustrates how some of the definitions below are interrelated:



**Plastics** include plastic polymers, plastic materials, plastic products and plastic wastes.

**Plastic materials** consist of plastic polymers and additives, both unintentional and intentional, including fillers (from [GAIA, 2022](#)).

**Plastic pollution** is the unintended or unlawful presence of plastic in the environment, as well as toxic and climate pollution from plastics (from [GAIA, 2022](#)).

**Plastic polymers** include all synthetic polymers (organic, inorganic and hybrid) as well as all semi-synthetic polymers, in their diverse states of matter, water solubility and water absorbency (from [GAIA, 2022](#)).

**Semi-synthetic polymers** are natural polymers that have been modified in a manner that affects polymer properties (e.g. vulcanization, viscose process, lyocell process) (from [GAIA, 2022](#)).

**Plastic product:** A product or component made wholly or partly from plastic materials, including intermediate products used to manufacture other products (e.g. pellets and other primary microplastics, polystyrene beads, rolls of film) (adapted from [Directive \(EU\) 2019/904 on the reduction of the impact of certain plastic products on the environment](#)).

## Other definitions

**Avoidable plastic product or material:** A plastic or material product for which alternatives have been developed that have equivalent functionality and adequate performance. Systemic alternatives (e.g. avoidance of single-use plastic products through reuse and refill) are often preferable to alternative single-use products from an environmental standpoint (adapted from Cousins, et al. (2019). [The concept of essential use for determining when uses of PFASs can be phased out](#). *Environmental Science: Processes & Impacts*, 21(11).<sup>73</sup>

**Circular economy:** “An approach contributing to Sustainable Consumption and Production patterns, refers to a system where products, materials and resources maintain their value and use in the economy, for as long as possible, thus minimizing waste by sharing, leasing, reusing, repairing, refurbishing, remanufacturing and recycling, instead of throw-away or take-make-dispose.” (definition from the [Amendments to the Regional Plan on Marine Litter Management in the Mediterranean in the Framework of Article 15 of the Land Based Sources Protocol](#) under the Barcelona Convention). *Note: the main indicator for the circular economy must be annual primary material production, not recycling rates - see [Chapter 9: The Plastics Circularity Trap \(page 33\)](#) and referenced publications by Roland Geyer.*

**Essential use:** Use considered essential because it is necessary for health or safety or critical for the functioning of society and for which there are no alternatives that are acceptable from the standpoint of environment and health (adapted from the [European Union Chemicals Strategy for Sustainability Towards a Toxic-Free Environment](#) which draws on the Montreal Protocol [Decision IV/25](#)).

**High-risk plastic product or material:** Plastic product or material with high risk of causing plastic pollution, based on its probability of the plastic to end up in the environment, and resulting impacts on the environment and human health (adapted from WWF 2023 [Breaking down high-risk plastic products](#)).

**Just transition:** Ending plastic pollution in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind. It is based on making visible those already working at all stages of the plastic value chain, including waste pickers and other workers in informal and

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<sup>73</sup> Cousins, I. T., Goldenman, G., Herzke, D., Lohmann, R., Miller, M., Ng, C. A., Patton, S., Scheringer, M., Trier, X., Vierke, L., Wang, Z., & DeWitt, J. C. (2019). [The concept of essential use for determining when uses of PFASs can be phased out](#). *Environmental Science: Processes & Impacts*, 21(11), 1803–1815.



cooperative settings and recognizing their fundamental human dignity and their historic contribution (defined in the context of global plastics treaty [by International Alliance of Waste Pickers](#)).

**Lifecycle:** “life cycle approach means considering all potential impacts of all activities and outcomes associated with the production and consumption of plastics including raw material extraction and processing (for plastics: refining; cracking; polymerisation), design and manufacturing, packaging, distribution, use and reuse, maintenance and end of life management, including segregation, collection, sorting, recycling, and disposal” (from UNEP 2021 [Plastics Science](#), UNEP/PP/INC.1/7).

**Recycling:** “any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.” (EU [Directive 2008/98 on waste](#), aligned with the Basel Convention [Glossary of Terms](#)).

**Refill:** The action of using a container that is owned by the consumer and is either refilled in the shop or refilled at home (from DUH & Zero Waste Europe 2022 [Packaging Reuse vs. Packaging Prevention: Understanding which policy measures best apply](#)).

**Reuse system:** A comprehensive system designed for multiple circulations of reusable packaging which remains in the ownership of the reuse system and loaned to the consumer (from University of Portsmouth Global Plastics Policy Centre 2023 [Making reuse a reality: A systems approach to tackling single-use plastic pollution](#)).

**Short-lived product:** A product with a use phase of less than three years.

**Single-use product:** A product that is not conceived, designed or placed on the market to accomplish, within its life span, multiple trips or rotations by being returned to a producer for refill or reused for the same purpose for which it was conceived (adapted from EU [Directive 2019/904 on the reduction of the impact of certain plastic products on the environment](#)).

**Zero waste:** The conservation of all resources by means of reducing production and consumption, reuse, and recycling of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health. (adapted from [Zero Waste International Alliance, 2018](#)).



about  
**GAIA**

**GAIA** is a network of grassroots groups as well as national and regional alliances representing more than 1000 organizations from 92 countries.

We envision a just, zero waste world built on respect for ecological limits and community rights, where people are free from the burden of toxic and plastic pollution, and resources are sustainably conserved, not burned or dumped.



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